



## Complete Summary

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### TITLE

Acute myocardial infarction (AMI): mortality rate.

### SOURCE(S)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

## Brief Abstract

### DESCRIPTION

This measure assesses the number of deaths per 100 discharges with a principal diagnosis code of acute myocardial infarction (AMI).

Thirty-day mortality may be significantly different than in-hospital mortality, leading to information bias. This indicator should be considered in conjunction with length-of-stay and transfer rates. Risk adjustment for clinical factors (or at a minimum 3M™ All-Patient Refined Diagnosis-Related Groups [APR-DRGs]) is recommended.

### RATIONALE

Timely and effective treatments for acute myocardial infarction (AMI), which are essential for patient survival, include appropriate use of thrombolytic therapy and revascularization. Better processes of care may reduce mortality for AMI, which represents better quality.

### PRIMARY CLINICAL COMPONENT

Acute myocardial infarction; mortality

### DENOMINATOR DESCRIPTION

All discharges, age 18 years and older, with a principal diagnosis code\* of acute myocardial infarction (AMI). Exclude patients with missing discharge disposition or transferring to another short-term hospital.

\*Refer to Appendix A of the original measure documentation for details.

### NUMERATOR DESCRIPTION

Number of deaths with a principal diagnosis code\* of acute myocardial infarction (AMI)

\*Refer to Appendix A of the original measure documentation for details.

## Evidence Supporting the Measure

### PRIMARY MEASURE DOMAIN

Outcome

### SECONDARY MEASURE DOMAIN

Not applicable

### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence  
One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Wide variation in quality for the performance measured

### EVIDENCE SUPPORTING NEED FOR THE MEASURE

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

External oversight/State government program  
Internal quality improvement  
Quality of care research

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Age greater than or equal to 18 years

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Acute myocardial infarction (AMI) affects 1.5 million people each year, and approximately one-third die in the acute phase of the heart attack.

### EVIDENCE FOR INCIDENCE/PREVALENCE

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

### ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

### BURDEN OF ILLNESS

See "Incidence/Prevalence" field.

### UTILIZATION

Unspecified

## COSTS

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Patients with acute myocardial infarction (AMI), age 18 years and older, discharged from the hospital (see the "Denominator Inclusions/Exclusions" field)

### DENOMINATOR SAMPLING FRAME

Patients associated with provider

### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

All discharges, age 18 years and older, with a principal diagnosis code\* of acute myocardial infarction (AMI).

\*Refer to Appendix A of the original measure documentation for details.

#### Exclusions

Exclude patients with missing discharge disposition or transferring to another short-term hospital.

### NUMERATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Number of deaths with a principal diagnosis code\* of acute myocardial infarction (AMI)

\*Refer to Appendix A of the original measure documentation for details.

#### Exclusions

Unspecified

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR TIME WINDOW

Institutionalization

#### DATA SOURCE

Administrative data

#### LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

#### OUTCOME TYPE

Clinical Outcome

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a lower score

#### ALLOWANCE FOR PATIENT FACTORS

Analysis by subgroup (stratification on patient factors)

Case-mix adjustment

Risk adjustment method widely or commercially available

## DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

Observed (raw) rates may be stratified by hospitals, age groups, race/ethnicity categories, sex, and payer categories.

Risk adjustment of the data is recommended using, at minimum, age, sex, and 3M™ All-Patient Refined Diagnosis-Related Groups (APR-DRGs)\*.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

Note: Information on the 3M™ APR-DRG system is available at [http://www.3m.com/us/healthcare/his/products/coding/refined\\_drg.jhtml](http://www.3m.com/us/healthcare/his/products/coding/refined_drg.jhtml).

## STANDARD OF COMPARISON

External comparison at a point in time

External comparison of time trends

Internal time comparison

## Evaluation of Measure Properties

## EXTENT OF MEASURE TESTING

Each potential quality indicator was evaluated against the following six criteria, which were considered essential for determining the reliability and validity of a quality indicator: face validity, precision, minimum bias, construct validity, fosters real quality improvement, and application. The project team searched Medline for articles relating to each of these six areas of evaluation. Additionally, extensive empirical testing of all potential indicators was conducted using the 1995-97 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. Table 2 in the original measure documentation summarizes the results of the literature review and empirical evaluations on the Inpatient Quality Indicators. Refer to the original measure documentation for details.

## EVIDENCE FOR RELIABILITY/VALIDITY TESTING

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p. (AHRQ Pub; no. 02-R0204).

## Identifying Information

## ORIGINAL TITLE

Acute myocardial infarction mortality rate (IQI 15).

## MEASURE COLLECTION

[Agency for Healthcare Research and Quality \(AHRQ\) Quality Indicators](#)

MEASURE SET NAME

[Agency for Healthcare Research and Quality \(AHRQ\) Inpatient Quality Indicators](#)

DEVELOPER

Agency for Healthcare Research and Quality

INCLUDED IN

National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2002 Jun

REVISION DATE

2004 Jul

MEASURE STATUS

Please note: This measure has been updated. The National Quality Measures Clearinghouse is working to update this summary.

SOURCE(S)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

MEASURE AVAILABILITY

The individual measure, "Acute Myocardial Infarction Mortality Rate (IQI 15)," is published in "AHRQ Quality Indicators. Guide to Inpatient Quality Indicators: Quality of Care in Hospitals -- Volume, Mortality, and Utilization." An update of this document is available in [Portable Document Format \(PDF\)](#) and a [zipped WordPerfect\(R\) file](#) from the [Quality Indicators](#) page at the Agency for Healthcare Research and Quality (AHRQ) Web site.

For more information, please contact the QI Support Team at [support@qualityindicators.ahrq.gov](mailto:support@qualityindicators.ahrq.gov).

## COMPANION DOCUMENTS

The following are available:

- "AHRQ Inpatient Quality Indicators Software (Version 2.1 Revision 3)" (Rockville, [MD]: AHRQ, 2004 Jul 21) and its accompanying documentation can be downloaded from the [Agency for Healthcare Research and Quality \(AHRQ\) Web site](#). (The software is available in SPSS- and SAS-compatible formats.)
- Guidance for using the AHRQ quality indicators for hospital-level public reporting or payment. Rockville (MD): Agency for Healthcare Research and Quality; 2004 Aug. 24 p. This document is available from the [AHRQ Web site](#).
- "AHRQ Inpatient Quality Indicators - Interpretative Guide" (Irving [TX]: Dallas-Fort Worth Hospital Council Data Initiative; 2002 Aug 1. 9 p.) is available. This guide helps you to understand and interpret the results derived from the application of the Inpatient Quality Indicators software to your own data and is available from the [AHRQ Web site](#).
- "Refinement of the HCUP Quality Indicators" (Rockville [MD]: AHRQ, 2001 May. Various pagings. [Technical review; no. 4]; AHRQ Publication No. 01-0035) is available. This document was prepared by the UCSF-Stanford Evidence-based Practice Center for AHRQ and can be downloaded from the [AHRQ Web site](#).

## NQMC STATUS

This NQMC summary was completed by ECRI on December 4, 2002. The information was verified by the Agency for Healthcare Research and Quality on December 26, 2002. This NQMC summary was updated by ECRI on April 7, 2004 and most recently on August 19, 2004. The information was verified by the measure developer on October 13, 2004.

## COPYRIGHT STATEMENT

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